

**REMARKS**

Claims 101, 104-106, and 111-112, and 116-125 are pending in the present case. In the Office Communication mailed August 19, 2008, the Examiner made a number of rejections. For clarity, these rejections are summarized below in the order in which they are addressed herein:

- I. Claims 101, 104-106, 111-112, 116-117 and 123-125 stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by (WO 94/29482) to Dahlberg, hereinafter "Dahlberg;"
- II. Claims 118-119 and 122 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Dahlberg in view of U.S. Patent No. 5,380, 833 to Urdea, hereinafter "Urdea;"
- III. Claims 120-121 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Dahlberg in view of Corey, J. Am. Chem. Soc., vol. 117, pages 9373-9374 (1995), hereinafter "Corey;"
- IV. Claims 101, 104-106 and 111-112, 116-120 and 122-125 stand provisionally rejected as being unpatentable under the judicially created doctrine of obviousness-type double patenting over co-pending Application Ser. No. 11/031,487, hereinafter "'487;"
- V. Claim 121 stands provisionally rejected as being unpatentable under the judicially created doctrine of obviousness-type double patenting over co-pending Application '487 in view of Corey;
- VI. Claims 101, 104-106 and 111-112, 116-120 and 122-125 stand provisionally rejected as being unpatentable under the judicially created doctrine of obviousness-type double patenting over co-pending Application Ser. No. 10/754,408, hereinafter "'408;" and
- VII. Claim 121 stands provisionally rejected as being unpatentable under the judicially created doctrine of obviousness-type double patenting over co-pending Application '408 in view of Corey.

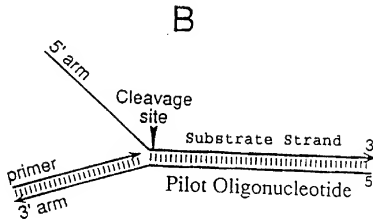
**35 U.S.C. §102**

**The Claims Are Not Anticipated**

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. MPEP 2131, citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d. 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). As explained in more detail below, the reference cited does not set forth each and every element of the rejected claims.

I. Claims 101, 104-106, 111-112, 115-117 and 123-125 stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Dahlberg. Applicants respectfully disagree.

The Examiner points to Figure 16B of Dahlberg for the teaching of a target nucleic acid containing a second region which is downstream and contiguous to a first region (Office Action, page 2, referencing the pilot oligonucleotide). Figure 16B of Dahlberg is shown below:



The Examiner further asserts that Dahlberg teaches a first oligonucleotide containing a portion that is completely complementary to the first region and a second oligonucleotide with a 3' portion and a 5' portion, wherein the 5' portion is completely complementary over the entire length of a second region of the target oligonucleotide. (Office communication, paragraph bridging pages 2 and 3). Applicants respectfully disagree. Inspection of Figure 16B, or any figure in Dahlberg, shows that the primer does

not contain any additional portion on the 3' end, beyond the portion of the primer that is completely complementary to the second region of the target (pilot) oligonucleotide. As discussed in the Amendment and Response filed on May 1, 2008, the claims in the instant case require that the second oligonucleotide comprise a 3' portion that is *in addition to* the 5' portion that is complementary to the entire length of the second region of the target nucleic acid. As such, the second oligonucleotide taught by Dahlberg, and exemplified by Figure 16B, does not contain a "3' portion" as recited in the instant claims.

The Examiner has asserted that the claimed first and second oligonucleotides are not structurally limited by the recited claim language to behave in the manner asserted to in the response. (Office communication, page 5). Applicants respectfully disagree. Nonetheless, for business reasons and without acquiescing to the Examiner's arguments, and reserving the right to prosecute the original or similar claims in one or more future applications, Claim 101 is herein amended to recite that the set of reagents comprises a target nucleic acid comprising a first region and a second region, wherein said second region is contiguous to and downstream of said first region. The remaining claims depend from Claim 101 and comprise these elements. Further, the recited first oligonucleotide comprises (in addition to the charged adduct) a portion completely complementary to the entire length of said first region of said target nucleic acid, and the second oligonucleotide comprises a 3' portion and a 5' portion, said 5' portion completely complementary to the entire length of said second region of said target nucleic acid.

Applicants submit that, as amended, the claims recite a target nucleic acid and oligonucleotides that are structurally defined by the recited regions of complementarity. Further, as recited, the second oligonucleotide comprises a 3' portion *in addition to* the 5' portion that is complementary to the second region of the target nucleic acid.

Dahlberg fails to teach or suggest a set of reagents comprising a target nucleic acid having the recited regions, and first and second oligonucleotides that contain regions complementary to the contiguous regions of the target nucleic acid, wherein the second oligonucleotide further comprises a 3' portion. In particular, Dahlberg does not teach or suggest a second oligonucleotide having a 5' portion that is complementary to the entire length of the second region of a target nucleic acid, and that additionally comprises a 3' portion. Dahlberg therefore fails to teach or suggest every element of Claims 101, 104-

106, 111-112, 115-117 and 123-125 and does not anticipate these claims. As such, Applicants respectfully request that this rejection be withdrawn.

**35 U.S.C. §103**

As the Board of Patent Appeal and Interferences has recently confirmed, a proper obviousness determination requires that an Examiner make “a searching comparison of the claimed invention – *including all its limitations* – with the teaching of the prior art.” *See In re Wada and Murphy*, Appeal 2007-3733, *citing In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis in original). Further, the necessary presence of all claim features is axiomatic, since the Supreme Court has long held that obviousness is a question of law based on underlying factual inquiries, including ... ascertaining the differences between *the claimed invention* and the prior art. *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966) (emphasis added). Indeed, Section 904 of the MPEP instructs Examiners to conduct an art search that covers “the invention *as described and claimed*.” (emphasis added). Lastly, Applicants respectfully direct attention to MPEP § 2143, the instructions of which buttress the conclusion that obviousness requires at least a suggestion of all of the features of a claim, since the Supreme Court in *KSR Int’l v. Teleflex Inc.* stated that “there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR Int’l v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007) (*quoting In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006).

In sum, it remains well-settled law that obviousness requires at least a suggestion of all of the features in a claim. *See In re Wada and Murphy*, *citing CFMT, Inc. v. Yieldup Intern. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) and *In re Royka*, 490 F.2d 981, 985 (CCPA 1974)).

**II.** Claims 118-119 and 122 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Dahlberg in view of Urdea.

For the reasons recited above, Applicants submit that Dahlberg does not teach or suggest a set of reagents comprising a target nucleic acid having the recited regions, and first and second oligonucleotides having the particular regions of complementarity to the target, as described above. Urdea fails to overcome this deficiency. Urdea teaches the

cleavage of a labeled oligonucleotide on a solid support using, *e.g.*, a restriction enzyme. Urdea does not teach the recited combination of: 1) a target nucleic acid comprising a first region and a second region, wherein said second region is contiguous to and downstream of said first region; 2) first and a second oligonucleotides that comprise defined regions of complementarity to the target nucleic acid such that second oligonucleotide comprises a 3' portion in addition to the portion that is complementary to the second region of the target nucleic acid; and 3) a thermostable 5' nuclease that lacks synthetic activity and that functions to cleave a nucleic acid cleavage structure at a temperature of at least 55°C. While Applicants do not acquiesce that the other elements necessary for establishing *prima facie* obviousness have been met, Applicants submit that the combination of Dahlberg and Urdea does not teach or suggest all the features of Claims 118-119 and 122, and cited art therefore fails to establish *prima facie* obviousness. Applicants respectfully request that this rejection be withdrawn.

**III.** Claims 120-121 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Dahlberg in view of Corey.

For the reasons recited above, Applicants submit that Dahlberg does not teach or suggest a set of reagents comprising a target nucleic acid having the recited regions, and first and second oligonucleotides having the particular regions of complementarity to the target, as described above. Corey fails to overcome this deficiency. Corey teaches the attachment of a polypeptide to a nucleic acid to enhance hybridization. Corey does not teach the recited combination of: 1) a target nucleic acid comprising a first region and a second region, wherein said second region is contiguous to and downstream of said first region; 2) first and a second oligonucleotides that comprise defined regions of complementarity to the target nucleic acid such that second oligonucleotide comprises a 3' portion in addition to the portion that is complementary to the second region of the target nucleic acid; and 3) a thermostable 5' nuclease that lacks synthetic activity and that functions to cleave a nucleic acid cleavage structure at a temperature of at least 55°C. While Applicants do not acquiesce that the other elements necessary for establishing *prima facie* obviousness have been met, Applicants submit that the combination of Dahlberg and Corey does not teach or suggest all the features of Claims 120 and 121, and

cited art therefore fails to establish prima facie obviousness. Applicants respectfully request that this rejection be removed.

**Obviousness-type Double Patenting**

**IV. – VI.** Claims 101, 104-106 and 111-112, 116-120 and 122-125 stand provisionally rejected as being unpatentable under the judicially created doctrine of obviousness-type double patenting over one or more of co-pending Application Ser. No. 10/754,408, filed 01/09/2004 and co-pending Application Ser. No. 11/031,487, filed 01/07/2005. The two applications cited by the Examiner in making the above-recited obviousness-type double patenting rejections are both substantially later filed than the instant application (which was filed 02/12/2002, and which claims priority to yet earlier filed cases). In accordance with the MPEP § 804 I.B.1 procedure regarding provisional double patenting rejections involving earlier and later filed applications, Applicants respectfully request that this double patenting rejection be held in abeyance until such time as a claim is found to be allowable, and that each of these double patenting rejections then be withdrawn from this earlier filed case.

**CONCLUSION**

For the reasons set forth above, it is respectfully submitted that all grounds for rejection have been addressed and Applicant's claims should be passed to allowance. Should the Examiner believe that a telephone interview would aid in the prosecution of this application, Applicants encourages the Examiner to call the undersigned collect at (608) 218-6900.

Dated: November 19, 2008

/Mary Ann D. Brow/  
Mary Ann D. Brow  
Registration No. 42,363  
CASIMIR JONES, S.C.  
440 Science Dr., Suite 203  
Madison, WI, 53711  
608-218-6900